In the Claims:

Please cancel claims 1-26 and 31-36.

Please add new claims 37-44 as follows:

1-26. (Cancelled)

27. (Original) A method for emulating hard-disk-drive vibroacoustics comprising: generating independently controlled acoustic waves initially traveling perpendicular to a base side of a housing; generating independently controlled vibratory motions in directions perpendicular to the base side of the housing; generating independently controlled vibratory motions in directions parallel to the base side of the housing.

28. (Original) The method for emulating hard-disk-drive vibroacoustics, according to claim 27, wherein the independently controlled vibratory motions in directions parallel to the base side of the housing synthesize a rotating force.

29. (Original) The method for emulating hard-disk-drive vibroacoustics, according to claim 27, wherein the housing is disposed in an electronic device where a hard disk drive would be positioned.

30. (Original) The method for emulating hard-disk-drive vibroacoustics, according to claim 27, further comprising: measuring the system response to the independently controlled acoustic waves, vibratory motions in directions perpendicular to the base side of the housing, and vibratory motions in directions parallel to the base side of the housing.

31-36. (Cancelled)

37. (New) A vibroacoustic emulator for emulating vibroacoustics of a hard disk drive, comprising: a housing having: a base side defining in-plane directions parallel to the base side and an out-of-plane direction perpendicular to the in-plane directions; a cover side substantially parallel to the base side; the housing having dimensions and mechanical attachment fixtures that replicate those of the hard disk drive; and a vibroacoustic generator coupled to the housing comprising an out-of-plane vibration source, wherein the out-of-plane vibration source comprises: a wire coil suspended in a plane substantially parallel to the base side of the housing; a magnetic field producer for producing a magnetic field parallel to the plane of the wire coil; and an out-of-plane vibration signal generator for providing input signals to the wire coil.

38. (New) The vibroacoustic emulator of claim 37, wherein the magnetic field producer comprises NdFeB magnets joined by a yoke.

39. (New) A vibroacoustic emulator for emulating vibroacoustics of a hard disk drive, comprising: a housing having: a base side defining in-plane directions parallel to the base side and an out-of-plane direction perpendicular to the in-plane directions; a cover side substantially parallel to the base side; the housing having dimensions and mechanical attachment fixtures that replicate those of the hard disk drive; and a vibroacoustic generator coupled to the housing comprising an out-of-plane vibration source, wherein the out-of-plane vibration source comprises: a support element coupled to the housing; a piezoelectric stack having a proximal end and a distal end, the piezoelectric stack being coupled at its proximal end to the support element; and an end mass coupled to the distal end of the piezoelectric stack.

40. (New) A vibroacoustic emulator, comprising: a housing; and a means for producing controlled variable vibroacoustic signals that simulate those of a hard disk drive, wherein

the means is coupled to the housing and comprises:

an out-of-plane actuator for producing vibrations perpendicular to the plane of the in-plane actuators; and

an out-of-plane signal generator for providing input signals for driving the out-of-plane actuator;

the housing is disposed in an electronic device where a hard disk drive would be positioned; and

the housing has dimensions and mechanical attachment fixtures that replicate those of the hard disk drive being emulated.

41. (New) The vibroacoustic emulator of claim 40 wherein the rotational signal generator and the out-of-plane signal generator share the same hardware.

42. (New) The vibroacoustic emulator of claim 40 wherein the means for producing controlled variable vibroacoustic signals further comprises: a first speaker coupled to a first side of the housing; and a first speaker signal generator for providing input signals for driving the first speaker.

43. (New) The vibroacoustic emulator of claim 42 wherein the first speaker signal generator and the rotational signal generator share the same hardware.

44. (New) The vibroacoustic emulator of claim 42 wherein the first speaker signal generator and the in-plane signal generator share the same hardware.

45. (New) A method for characterizing electronic-device vibroacoustics comprising: substituting a vibroacoustic emulator for a hard-disk drive in an electronic device; generating controlled vibroacoustics with the vibroacoustic emulator; measuring a quantity related to system vibroacoustics, wherein the controlled vibroacoustics generated with the vibroacoustic emulator comprises a vibratory out-of-plane force.